AMENDMENTS TO THE CLAIMS

Please amend the claims as indicated below. The language being added is underlined ("__") and the language being deleted contains either a strikethrough ("——") or is enclosed by double brackets ("[[ ]]").

1. (Currently Amended) A method for implementing smart digital subscriber line (DSL) for long reach digital subscriber line (LDSL) systems, the method comprising:

selecting a spectral mask by one of a central office and customer premise equipment (CPE) based upon performance criteria, wherein selecting a spectral mask further comprises selecting a spectral mask from a number of upstream masks (U1, U2, U3,...,Un) and a number of downstream masks (D1, D2, D3,..., Dn), wherein one of the number of upstream masks is defined by the following relations, wherein f is a frequency band in kHz and U1 is the value of the mask in dBm/Hz:

for $0 < f \leq 4$, then U1 = -97.5, with max power in the in 0-4 kHz band of +15 dBm;

for $4 < f \leq 25.875$, then $U1 = -92.5 + 23.43 \times \log_2(f/4)$;

for $25.875 < f \leq 60.375$, then U1 = -29.0;

for $60.375 < f \leq 90.5$, then $U1 = -34.5 - 95 \times \log_2(f/60.375)$;

for $90.5 < f \leq f\ 1221$, then U1 = -90;

for $1221 < f \leq 1630$, then U1 = -99.5 peak, with max power in the [f, f + 1 MHz] window of $(-90 - 48 \times \log_2(f/1221) + 60)$ dBm; and

for $1630 < f \leq 11040$, then U1 = -99.5 peak, with max power in the [f, f + 1 MHz] window of -50 dBm; and

activating the selected spectral mask based on at least one of customer premise or central office capabilities.

2. (Original) The method of claim 1 wherein selecting the spectral mask is performed manually.

3. (Original) The method of claim 1 wherein selecting the spectral mask is performed automatically.

4. (Currently Amended) The method of claim 3 wherein automatic selection of [[a]] the spectral mask is performed by line probing.

5. (Currently Amended) The method of claim 3 wherein automatic selection of [[a]] the spectral mask is performed by a many tests procedure performed during a training period.

6. (Original) The method of claim 1 wherein activating the selected spectral mask is accomplished by a customer premises equipment decision.

7. (Original) The method of claim 1 wherein activating the selected spectral mask is accomplished by a central office decision.

8. (Original) The method of claim 1 wherein activating the selected spectral mask is accomplished by a central office decision that overrules a customer premises decision.

9.-10. (Canceled)

11. (Currently Amended) The method of claim [[9]]1 wherein one of the number of downstream masks is defined by the following relations, wherein f is a frequency band in kHz and D1 is the value of the mask in dBm/Hz:

for $0 < f \leq 4$, then D1 = -97.5, with max power in the in 0-4 kHz band of +15 dBm;

for $4 < f \leq 25.875$, then $D1 = -92.5 + 20.79 \times \log_2(f/4)$;

for $25.875 < f \leq 81$, then D1 = -36.5;

for $81 < f \leq 92.1$, then $D1 = -36.5 - 70 \times \log_2(f/81)$;

for $92.1 < f \leq 121.4$, then D1 =-49.5;

for $121.4 < f \leq 138$, then $D1 = -49.5 + 70 \times \log_2(f/121.4)$;

for $138 < f \leq 353.625$, then $D1 = -36.5+0.0139x(f-138)$;

for $353.625 < f \leq 569.25$, then D1 = -33.5;

for $569.25< f \leq 1622.5$, then $D1 = -33.5 - 36 \times \log_2(f/569.25)$;

for $1622.5 < f \leq 3093$, then D1 = -90;

for $3093 < f \leq 4545$, then DI = -90 peak, with maximum power in the [f, f+1 MHz] window of $(-36.5-36 \times \log_2(f/1104)+60)$dBm; and

for $4545 < f \leq 11040$, then D1 = -90 peak, with maximum power in the [f, f +1

MHz] window of -50 dBm.

12. (Currently Amended) The method of claim [[9]]1 wherein one of the number of upstream masks is defined by the following relations, wherein f is a frequency band in kHz and U2 is the value of the mask in dBm/Hz:

for $0 < f \leq 4$, then U2 = -97.5, with max power in the in 0-4 kHz band of +15 dBm;

for $4 < f \leq 25.875$, then $U2 = -92.5 - 22.5 \times \log_2(f/4)$;

for $25.875 < f \leq 86.25$, then U2 = -30.9;

for $86.25 < f \leq 138.6$, then $U2 = -34.5 - 95 \times \log_2 (f/86.25)$;

for $138.6 < f \leq 1221$, then U2 = -99.5;

for $1221 < f \leq 1630$, then U2 = -99.5 peak, with max power in the [f, f + 1 MHz]

window of $(-90 - 48 \times \log_2 (f/1221) + 60)$ dBm; and

for $1630 < f \leq 11040$, then U2 = -99.5 peak, with max power in the [f, f + 1 MHz] window of -50 dBm.

13. (Currently Amended) The method of claim [[9]]1 wherein one of the number of downstream masks is defined by the following peak values, wherein f is a frequency in kHz and D2 is the peak value of the mask in dBm/Hz:

for f = 0.0, then D2 = -98.0;

for f = 3.99, then D2 = -98.00;

for f = 4.0, then D2 = -92.5;

for f = 80.0, then D2 = -72.5;

for f = 120.74, then D2 = -47.50;

for f = 120.75, then D2 = -37.80;

for f = 138.0, then D2 = -36.8;

for f = 276.0, then D2 = -33.5;

for f = 677.0625, then D2 = -33.5;

for f = 956.0, then D2 = -62.0;

for f = 1800.0, then D2 = -62.0;

for f = 2290.0, then D2 = -90.0;

for f = 3093.0, then D2 = -90.0;

for f = 4545.0, then D2 = -110.0; and

for f = 12000.0, then D2 = -110.0.

14. (Currently Amended) The method of claim [[9]]1 wherein one of the number of upstream masks is defined by the following peak values, wherein f is a frequency in kHz and U3 is the peak value of the mask in dBm/Hz:

for f = 0, then U3 = -101.5;

for f =4, then U3 =-101.5;

for f = 4, then U3 = -96;

for f = 25.875, then U3 = -36.30;

for f = 103.5, then U3 = -36.30;

for f = 164.1, then U3 = -99.5;

for f = 1221, then U3 = -99.5;

for f = 1630, then U3 = -113.5; and

for f = 12000, then U3 = - 113.5.

15. (Currently Amended) The method of claim [[9]]1 wherein one of the number of downstream masks is defined by the following peak values, wherein f is a frequency in kHz and D3 is the peak value of the mask in dBm/Hz:

for f = 0, then D3 = -101.5;

for f =4, then D3 = -101.5;

for f = 4, then D3 = -96;

for f = 80, then D3 = -76;

for f = 138, then D3 = -47.5;

for f = 138, then D3 = -40;

for f = 276, then D3 = -37;

for f = 552, then D3 = -37;

for f = 956, then D3 = -65.5;

for f = 1800, then D3 = -65.5;

for f = 2290, then D3 = -93.5;

for f = 3093, then D3 = -93.5;

for f = 4545, then D3 = -113.5; and

for f = 12000, then D3 = -113.5.

16. (New) A system comprising:

means for selecting a spectral mask according to performance criteria, wherein means for selecting a spectral mask further comprises means for selecting a spectral mask from among a plurality of upstream masks, wherein one of the plurality of upstream masks is defined by the following:

for $0 < f \leq 4$, then U1 = -97.5, with max power in the in 0-4 kHz band of +15 dBm;

for $4 < f \leq 25.875$, then $U1 = -92.5 + 23.43 \times \log_2(f/4)$;

for $25.875 < f \leq 60.375$, then U1 = -29.0;

for $60.375 < f \leq 90.5$, then $U1 = -34.5 - 95 \times \log_2(f/60.375)$;

for $90.5 < f \leq f\ 1221$, then U1 = -90;

for $1221 < f \leq 1630$, then U1 = -99.5 peak, with max power in the $[f, f + 1\ MHz]$ window of $(-90 - 48 \times \log_2(f/1221) + 60)$ dBm; and

for $1630 < f \leq 11040$, then U1 = -99.5 peak, with max power in the $[f, f + 1\ MHz]$ window of -50 dBm,

wherein f is a frequency band in kHz and U1 is the value of the spectral mask in dBm/Hz; and

means for activating the selected spectral mask.